

MAP SHOWING, ON A GEOLOGICAL BASIS, THE PRIMITIVE DISTRIBUTION OF OPEN LAND, WOODLAND AND MARSH IN THE MIDDLE THAMES VALLEY

ANTIQUITIES FROM THE MIDDLE THAMES

By G. F. LAWRENCE

Antiquities found in the bed of the Thames during dredging and other operations are of great value in determining the source of some of the influences operating upon the cultures of south-eastern Britain in early times. Before roads were made, the easiest mode of access from overseas into the heart of southern Britain would be by the river; and this is well shown both by the abundance of relics discovered in the river-bed and by the continual occurrence amongst them of relics of foreign types. In this paper I propose to say something of the general character and distribution of these river-finds in that part of the Thames which lies between Hampton Court and London—those reaches of which I have the fullest personal experience.

In the following pages, B.M. = British Museum, L.M. = London Museum. Other collections frequently referred to are the Lloyd Collection, now in the Richmond Public Library, and the Layton Collection, now in the Brentford Public Library.

There is no need to say much of the palaeolithic period. The river was totally different in those early times, and the implements found in the gravels which have at various times formed a part of its bed may have travelled some distance before their deposition. The proof of this, as is well known, is that most of them are abraded in consequence of rolling during transit down the river from some other site. The discovery of floors, notably at Stoke Newington, is evidence that some objects have remained in their original position, but these are not usual. Implements of late type, small ovates, Mousterian tools and later palaeolithic forms have indeed been found also in the present bed of the river. These, however, are probably not *in situ*, and it would certainly be rash to infer that the river has not altered drastically since these mid or late palaeolithic times. When we turn to the neolithic period, we reach more certain ground. I am strongly of opinion that from the neolithic period the river

has not greatly changed. Minor subsidences have occurred, but the actual bed of the river is practically unaltered, owing to the fact that the top of the gravel is firmly compacted, and on the top of this and embedded in this layer are stone and bronze objects. Moreover a considerable number of these objects had recent leech-eggs attached to them, showing that they had lain on the top of the gravel for some time. As examples of prehistoric relics from this top layer of the river-bed, I may mention a bronze dagger blade found by a lad diving at Brentford Ferry (L.M.); a diorite axe found by me embedded in the top gravel at Barnes; and a bronze palstave found by a boatman in the channel between Chiswick Eyot and the Middlesex shore (B.M.). I have also heard of instances of implements having been brought down by bottom-ice which, becoming detached during a thaw, has brought with it stone and other materials frozen to it during a frost.

It is a curious fact that when excavations are made in the ground behind the banks fringing the river, the gravel is usually fine, sandy, and ochreous and contains no antiquities: the finds occurring at the base of the made earth and not in the ochreous gravel. The colour also is evidence, as the Thames bed gravels are of a dark brownish black except in two instances known to me at Chiswick and Teddington, where there are stretches of ochreous gravel in the bed of the river.

The deposits of sand and mud occasionally seen on stretches of the foreshore at low tide are removed during the flood season, leaving the hard compact floor as it usually is except when broken through in dredging-operations. The depth of gravel differs at various places, as I shall mention later. It is necessary to bear in mind that before the river was embanked, it extended in many places much farther laterally, and that during certain times of the year no doubt much of the bed was more or less dry, with smaller streams running through it. This area was naturally all covered during flood-time. The deposits of peat at various places are evidence of this shallowing of the water in the bed, and this also helps to account for the presence of some of the implements at certain spots. No doubt early man knew the use of leaping poles for jumping over the narrower channels, as in the Fens at a later time.

It has frequently occurred to me that the presence of so many fine implements in the beds of rivers and lakes is not altogether easy to explain. The great intrinsic value of many of these to primitive man, able presumably to swim and dive, makes it difficult to account for all of these by the theory of accidental loss. May some of them have been thrown in as offerings to the offended river deity during times of flood and drought in accordance with a custom prevalent at many periods in various parts of the world? That the antiquities found in the river were not all lost by the overturning of canoes, is shown, I consider, by the frequent occurrence of these objects in certain restricted spots. In some instances, these spots may have been the sites of fords; in others, where the relics occur at the sides rather than in the centre, there may have stood riverside villages. Some attempt will be made at the end of this paper to estimate the probabilities in the case of the more important groups.

I may mention in passing that I fear the 'Golden Age' of Thames finds is now past. The system of dredging at present is merely to keep a centre-cut for vessels, leaving the sides (in which usually lie the antiquities) undredged. No objects are found when dredging these cut channels. It is clear therefore that the adjacent bed is so compacted that nothing of interest falls in from the sides of the cut, and the filling-material from the later clearing of the channel consists merely of drifted debris, sand, gravel and mud brought down from the higher reaches of the river. The vast amount of water drawn off for reservoir-purposes at the present day naturally lessens the volume of water in the river in normal times, and the Port of London authority finds it necessary to cut this deep groove in the bed for the purposes of navigation. Indeed, it appears almost as though the day is not far distant when this part of the Thames will be in the nature of a canal, with the present foreshore more or less dry. Should this occur, then the opportunity will arise for the digging away of the surface of this foreshore, a process which will undoubtedly result in the finding of relics of early man; for my experience is that these objects do not lie usually at a greater depth than about 2 to 3 feet from the present surface.

In the earlier days, there was little restriction as to

dredging-operations and many cuts were made nearer the shore. These resulted in the finding of many of the relics in our museums. But as this practice was dangerous, owing to the fact that these dredged holes filled with mud and were traps for unwary bathers (some of whom were drowned), the river authorities prohibited it, enforcing such heavy fines that the profit on the dredging was more than covered by these fines. Moreover, the cutting away of the foreshore weakened the banks, and the owners of property adjoining the river protested both vigorously and effectively about the matter.

A word of warning may here be uttered in regard to finds from certain stretches of the foreshore. I was told by the late Sir Wollaston Franks that, when London Pool was dredged close to London Bridge during the rebuilding of the latter, material from this dredging was thrown on the foreshore at various places, notably at Hammersmith and Wandsworth, and also that holes left by gravel-diggers on Barnes Common were filled with some of this material. He mentioned, as an example, that in the British Museum is a Roman bronze statuette, found in one of these holes at Barnes, which from its condition puzzled Sir Wollaston Franks until he discovered that it must originally have come from the Thames at London and then have been thrown into its place of discovery with the accompanying gravel. I myself had several pilgrims' signs from the foreshore at Hammersmith some twenty years ago. These no doubt came from the Thames at London where they have frequently been found; it is unusual to find them elsewhere in the river, although isolated instances have occurred.

I had perhaps better also record here this fact about the foreshore generally. Where a stone face has been built by the Port of London Authority, the gravel in the front of this is frequently brought from other parts of the river and thrown there to protect the new wall, so that it is advisable, when objects are found in this material, to enquire where the gravel had been obtained. When this wall is built, it is usual to dig a shallow trench near the bottom of the bank and I do not remember getting anything from these trenches, even from the most prolific sites, but have frequently had objects which have been found between this wall and the edge at low water.

From my experience of the many finds made when dredging out the backwater at Eel Pie Island, some forty years ago, good results should be obtained by digging out similar channels at the various islands enumerated in this paper ; there is little doubt that these spots were inhabited, with others, in early times, and the narrow channel would naturally be used for transit to and from them. Perhaps some public-spirited antiquary will find the means for temporarily filling up the two ends of one of these channels, and then some serious digging could be done.

Many of the bronze objects from the river have wood remaining in the socket. This suggests that they lie intact at the bottom of the river, but naturally the teeth of the 'grab' used in dredging breaks the wood into fragments. If proper digging could be done, these wooden handles would be found complete and would thus solve several perplexing problems. For example, at present the form of the palstave-handle is not well substantiated in this country. The haft was probably bent at the end to bring the blade into position, but I have seen suggested restorations where the palstave was mounted in a straight line with the haft, more in the style of the spud of later times.

When bronze objects are found in the river-bed itself, and have not been exposed to the air, they frequently are of a bright golden colour with extremely sharp edges when brought to the surface, but if they have lain on the foreshore, where they have got alternately dry and wet, they are more or less corroded. This obtains in my section of the river ; but where, as at Windsor, an excess of lime occurs in the water, antiquities are often in poor condition, even though from the actual bed.

I will give a short enumeration of some of the finds from above my proper area, which have come to me, before I speak more systematically of the district with which I am more familiar. A fair number of Saxon and Danish weapons are found all along the course of the river, notably at old Windsor where many have been dredged up. But owing to the excess of lime in the water at this part of the river, they are usually in very bad condition and many are broken as though through the accidents of fighting or other usage.

Unless otherwise mentioned, all the objects noticed in this

paper have passed through my hands and have come direct from the finders to me. I will preface my list of objects, by saying that I have had well over 100 of the so-called Thames picks from many parts of the river (Pl. ii, 4) and also venture, with some trepidation, to question the term pick for these implements, as they have an axe-like edge. Moreover, true pointed picks are occasionally found in the Thames (Pl. ii, 1-3) and the title of 'pick' causes some confusion. A few pigmies have turned up (one from Eel Pie Island), but I regret that I have no notes of them.

MARLOW

From Marlow came two iron currency bars, one of them being 22 in. long and weighing just over 9,000 grains.

WINDSOR

Windsor has been rather productive. Several horn implements have been found there and I have also had a pick of Campigny type, a polisher of quartzite, a perforated stone axe-hammer, part of a bronze spear-butt, a bronze dagger-blade with broad base and two rivet holes, an Early Iron Age spear-head with grooved blade and slight central midrib and a groove at the end of the socket, with an iron pin; an Anglo-Saxon spear-head of narrow form with three bands of incised lines on the socket, 30 in. long, another of broader form with similar bands on the socket, and a Roman pewter dish of deep form. These came principally from Old Windsor. A number of Viking iron weapons have also been found there, but usually in the poor and fragmentary condition upon which I have already remarked.

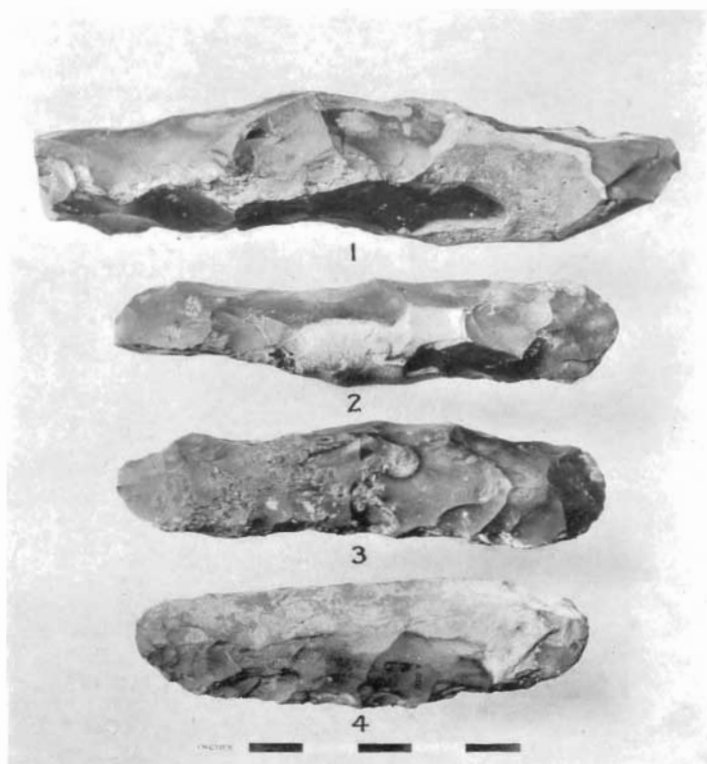
DATCHET

From Datchet came a bone lance-head; a bronze sword with V-termination to the handle-plate; a bronze lance-head with loops at the base of the blade; another with lunate openings in the blade; an interesting early specimen which originally had loops on the socket, but these were broken away probably in use, and a rivet-hole had been bored through the fracture in later bronze age times; a bronze rapier-blade 19 $\frac{7}{8}$ in. long; an Early Iron Age sword blade 27 $\frac{1}{2}$ in. long; two iron currency bars, part of a spear-head; part of another Early Iron Age sword in its iron sheath, decorated with a symbol resembling the swastika, in relief; an Anglo-Saxon bronze bowl; and a Viking spear-head (Petersen's¹ type M) all in the L.M.

STAINES

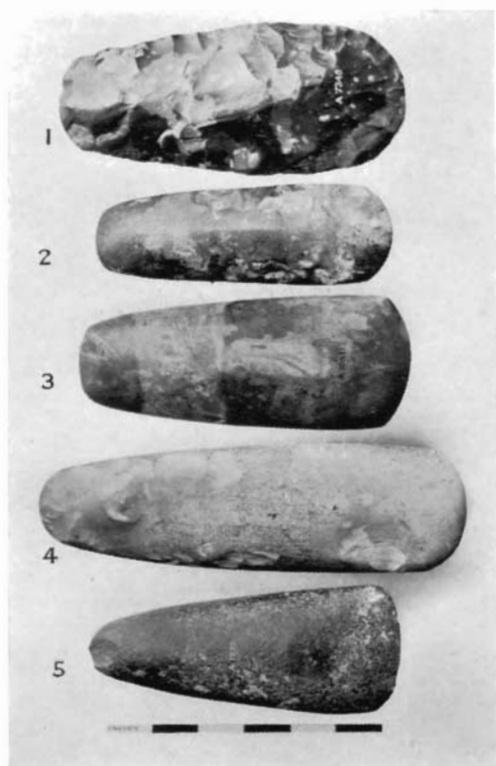
Staines is the next locality from which I have obtained antiquities. These comprise a staghorn with notch cut on the shaft preparatory to breaking it to make an implement; a stag's-horn pick; a polished flint adze; a chipped adze; a polished flint axe showing a scar where the handle fitted; three other polished axes; a bronze sword; the lower end of a sword-blade of

¹ J. Petersen, *De Norske Vikingesverd* (Kristiania).



'THAMES PICKS' OF FLINT, FROM THE THAMES: 1 AND 2, WANDSWORTH;
3, NEAR LONDON; 4, RICHMOND. Scale of inches

(London Museum)



FLINT AND STONE AXES, FROM THE THAMES : 1, BATTERSEA ;
 2, WANDSWORTH ; 3 (SHOWING MARK OF FORMER HANDLE),
 STAINES ; 4, WANDSWORTH. Scale of inches.

(London Museum)

'carp's-tongue' type; a rapier-blade; two spear-heads (one with angular terminations to the blade and dotted decoration); two bronze spear-butts; a small hoard consisting of a piece of a sword, two parts of a spear-head, and part of an axe; an Anglo-Saxon spear-head; and a Viking sword of Wheeler's Type VI (eleventh century¹).

MOLESEY

From Molesey is a knife-dagger $6\frac{1}{4}$ in. long (B.M. Sturge Collection).

SUNBURY

Sunbury also has produced a similar object 6 in. long (B.M. Sturge Collection), a bronze spear-head (type of Evans, *Bronze Implements*, Fig. 407), and a bronze javelin-head in the L.M.

COWEY STAKES

From Cowey Stakes came a short Anglo-Saxon sword with cocked-hat pommel; a scramasax, and a spur with short prick, possibly of the same period, all now in the L.M.

HAMPTON COURT

From Hampton Court came a horn hammer of oblong form, the open end filled by two plugs of horn, an unusual feature; and two polished flint axes were found opposite the 'Water Gallery' of the Palace. A most unusual late Bronze Age spear-head, now in the L.M., also came from here. It has a leaf-shaped blade, the outline accentuated by a strong rib near the edge, the lower part of the blade having a triangular opening on either side of the central rib. The *iron* rivet remains in position, and the wood, apparently oak, remains in the socket. Another of ordinary leaf-shaped type with rivet-hole is now in the B.M., and a late Bronze Age urn with four pierced knobs on the side also comes from here (L.M.). An Early Iron Age spear-head, a Viking spear-head (Petersen's type G), the blade of a scramasax with inlaid silver bands on the blade, $7\frac{1}{2}$ in. long, and an axe-head; and at Karno's Island, amongst piles, a bronze dagger-blade of somewhat broad form, with four rivet-holes, a small Saxon pot, and a number of bones of various animals were found. With the exception of the bones, all these objects are now in the L.M. From Ditton came a curious socketed bronze axe, with short oblong blade, cylindrical socket, and with the loop on one face, a most unusual type; also a long spear-butt. These are now in the B.M.

SURBITON

From Surbiton or Ditton I have had three polished flint axes, and a long bronze rapier-blade with slight notches at the base of the tang and two rivets. These are in the B.M.

KINGSTON

I now reach the district with which I am more familiar, where I was in closer touch with the men employed in making the various embankments flanking the river. An urn of black ware came from here in 1914, a boat-

¹ R. E. M. Wheeler, *London and the Vikings* (London Museum, 1927), pp. 32, 37.

shaped stone axe hammer of unusual type and in fine condition, a large leaf-shaped flint arrow-head, a looped bronze palstave, a rapier-blade, a half of a bronze sword, a bronze spear-head of late type (all in L.M.), a bronze leaf-shaped sword 22½ in. long, and a flanged bronze axe (B.M.). A socketed bronze axe, a bronze scabbard-chape with curved sides, and a pestle-shaped perforated hammer were found together opposite the dock above the bridge, on the Surrey side. A bronze dagger-blade of short form with broad tang and two rivets, a spear-butt worn at the side through the user 'trailing' the shaft on the ground (these are all in the B.M.), and a bronze chisel and drill found at a place called 'one tree' (B.M.). In the Lloyd Collection in the Richmond Public Library is a bronze spear-head of the rare hollow-cast type, figured in *Archaeologia* lxi, Pl. 71, Fig. 44. Only an iron sickle and a knife of simple form of the Early Iron period have come to me, but four Anglo-Saxon spear-heads from here are now in the L.M.

TEDDINGTON

At Teddington, below the lock and weir there is a patch of ochreous gravel in the river bed, and from this patch have come two or three double-ended flint axes of rare type, which are in the Lloyd Collection in the Richmond Library. Opposite Pope's Villa a number of bronze implements have been found, but I have seen nothing from the main river at Eel Pie Island or below to Richmond, except a bronze lance-head found near Glover's Island (B.M. see *Arch.* lxi, Pl. 78, Fig. 66) and two spear-heads to be mentioned later. From above Eel Pie Island nearer Pope's Villa came a flat polished flint axe, expanding towards the edge (B.M.), a fine polished specimen of thick proportions and lozenge section (*B.M. Guide to Stone Age*, Fig. 97), another with pointed butt 9 in. long (B.M.), another of late type with flat sides (B.M.), an interesting horn hammer with faceted decoration (B.M.; see *Arch.* lxix, Fig. 7), a bronze knife-dagger of early type (L.M.), a bronze javelin-head (L.M.), a bronze dagger-blade (L.M.), an interesting spear-head with wire loops at the base of the blade (B.M.; see *Arch.* lxi, Pl. 64, Fig. 24), a socketed bronze axe (L.M.), another with square socket, 4½ in. long, a bronze sword of leaf-shaped form, the handle-plate pierced for seven rivets, and with traces of the bone grip remaining on the handle-plate (L.M.), and an Early Iron Age spear-head. In the Lloyd Collection in the Richmond Library is a broad leaf-shaped bronze spear-head, with rivet-hole, also from below Teddington.

EEL PIE ISLAND

Eel Pie Island was no doubt inhabited in prehistoric times. When the backwater on the north side was dredged out about forty years ago, a number of flint flakes, small neolithic implements, axes, horn hoes and hammers, and bronze implements were found, and I was informed that there was a pile causeway from the mainland to the island, which took a sharp turn towards the middle and then was again continued in a straight line. This (if correctly observed) may have been intended to prevent a dash by an enemy on to the Island. A flint 'fabricator' from here is in the L.M., and a fine cushion-hammer of black and grey banded volcanic stone is in the B.M. (*B.M. Guide to Stone Age*, 2nd edition, Fig. 133). A partly polished flint axe, a small bronze dagger-blade of early form with notches at the base, a palstave, a

leaf-shaped flint lance-head, and a bronze spear-head with loops at the base of the blade (*Arch.* lxi, Pl. 65, Fig. 27), all in the B.M., also come from here, together with other objects of which I regret that I have no record.

In the Lloyd Collection in the Richmond Library is an early type of bronze spear-head, showing development from the dagger, but with a rivet-hole (*Arch.* lxi, Pl. 61, Fig. 12), and the blade of a dagger of Arretton Down type, both rare from the Thames. In the L.M. is a stag's-horn hoe, with oval shaft hole. This I consider to be of the Early Iron Age, as the horn implements found in Barrows of the Early Bronze Age have circular perforations and the making of an oval hole is certainly more difficult; although, when once a man knew how to make this, the custom continued, as the tool would not now turn on its axis.

RICHMOND

Richmond has been fairly productive, and there are specimens of stone and bronze in the Lloyd Collection. I have not included these in this paper save in cases of exceptional interest. A small ovate palaeolith, a flint scraper, a barbed flint arrow-head (the latter found by the island just below the Bridge) two flint adzes, some 'Thames picks,' are, except the arrow-head, in the L.M. A very fine true pick of lozenge section, pointed at either end (B.M. Sturge Collection), a broad flint chisel with polished edge, a fine polished flint celt with flat sides and rounded butt are all in the B.M.; as also is a bronze rapier-blade with two side-notches and two rivets, and a small dagger-blade with two rivets. In the L.M. are a bronze dagger-blade and a socketed axe with faceted sides, of late Bronze Age; and a razor with oblong slot and two rings is in the B.M. (*B.M. Bronze Age Guide*, Fig. 46). In the B.M. also is a pestle-shaped hammer-head of stone. Just above Richmond Bridge, under the bank bordering the Star and Garter meadows, two very fine and unusual spear-heads of bronze were found together. One is of the rare hollow type (*Arch.* lxi, Pl. 71, Fig. 45), the other has a strap moulding where the blade joins the socket (*Ib.* Pl. 68, Fig. 36); both are now in the B.M. A spear-butt and a spear-head (both L.M.), a long spear-head with wire loops at base of blade, 18½ in. long (Lloyd Collection), and several Early Iron Age spear-heads with grooved blades have also been found in the Thames at Richmond. A Roman pewter cup with bosses on the rim and a scramasax, both from this part of the river are in the Layton Collection in the Brentford Public Library. In the L.M. is a spear-head of the Saxon period; and of later periods, a fine fifteenth-century gold ring with a stag's head on the bezil was found in making a channel into the Thames for drainage-purposes near the Palace (B.M.), and two medieval keys and an axe are in the L.M. In dredging-operations for the lock and weir, a fine leaf-shaped flint lance-head of narrow form (Laver Collection), a triangular flint knife with ground edge; a bronze leaf-shaped sword and a bronze gouge were found (all B.M.). Mr. Lloyd told me that he had obtained a ground knife from this spot, but it was not to be found when I catalogued his collection after his death.

Nothing has come to me from below the lock and weir, except a large Roman pewter dish with decorated centre of the fourth century (L.M.) from Sheen Gull, until Isleworth Ferry is reached, although some dredging has been done here.

ISLEWORTH

On the Surrey side, at the Ferry, were three dug-out canoes lying side by side on the foreshore. Two of these were excavated by the Port of London authority when I was present, but owing to various unhappy circumstances they fell to pieces while being got out and the fragments were hopelessly mixed up when they were landed at Strand on the Green. The presence of these at this spot suggests to me that the backwater between the islands and the Middlesex shore above the Ferry would repay exploration, as they hint at occupation of these islands at least during the Early Iron period.

From Isleworth I have had several antiquities:—a flat polished flint axe with narrow blade and sharp sides (B.M.), a polished flint axe (Manchester Museum), a bronze spear-head (B.M.; see *Arch.* lxi, Pl. 66, Fig. 31) a spear-butt (*Ib.* Pl. 80, p. 75) a very fine spear-head (*Ib.* Pl. 67, Fig. 32) another (Pl. 68, Fig. 35). A bronze sword with V-termination (B.M.), an early bronze palstave, developed from the flanged type (B.M.), a dagger blade 13 in. long with two rivets (Edinburgh Museum), a Roman urn of grey ware (L.M.), and an Anglo-Saxon 'francisca' type of axe.

SION REACH

This is one of the most prolific and interesting localities in the whole of the river. Sion Reach, the north shore of which is called 'Old England' locally, rouses a feeling of interest from the mere name, which suggests the possibility of an early settlement here. Relics found hereabouts range from the neolithic all through the Bronze Age; there are a few Early Iron Age objects; whilst Roman and Saxon antiquities, and one or two relics of the occupation of Sion House during the sixteenth century have all been brought to me at various times. The number and variety of the finds of these various periods are proof of the importance of Old England at least during the late Bronze Age, and Mr. O. G. S. Crawford some years ago propounded the theory that pile-dwellers from the Continent may have settled here at that time (*Ant. Journ.* ii, 27). He makes one error in his mention of this site. The relics in the B.M. and the L.M. are all from the foreshore of the river at the point I am about to mention and *not* from the adjacent marsh. I got nothing from the excavation of the adjacent railway-dock, whatever others may have done. My specimens have come from round a point where a line of trees (which ends at right angles to the water) borders the grounds of Sion House to the east. A socketed bronze axe (B.M.) was found amongst some piles at this spot; and at least two bronze razors came from the actual foreshore here, found at low tide. One or two bronzes which I have seen from here show signs of melting by fire.

The antiquities I am about to enumerate came from various parts of this reach, except those mentioned as definitely from the piles, which occur in the river bed and foreshore on the north side of the river. The probability is that the greater number of the others came from the south side, although I have actual evidence of only a few objects. I fear that, except on the foreshore, little is left for future research as this reach has been most constantly and thoroughly dredged out during the last forty years.

A palaeolithic implement, with ice-scratches on the flaked surface, an ovate implement and several worked flakes perhaps of the Cave period are from here.

A fine flint pick of long cylindrical form (B.M.), another roughly shaped (L.M.), a number of axes of flint and diorite, a gouge of hard greenish stone (L.M.), and other neoliths have come to me from this reach.

The objects of the Bronze Age are more important. A fair number of horn implements have been found and are in various collections. In the L.M. is an interesting stone axe with incurved sides, copying the form of the flat bronze axe (Pl. iv). (Incidentally it is a curious fact that axes of this early flat form in copper or bronze are extremely rare from the Thames.) A flanged bronze axe and a palstave are in the L.M., as well as an interesting winged palstave of foreign type. A palstave with cabled outline to the flange and a plain specimen with a side loop are both in the B.M. Three bronze socketed axes are in the L.M., and another is in the Lloyd Collection at Richmond. An axe with chamfered angles to the blade and one with curved cross lines are both in the B.M. and are of the late Bronze Age. A short dagger-blade with two rivet-holes is in the Guildhall Museum. Four early bronze chisels with tangs (three in the L.M. and one in the B.M.), a small socketed chisel and a large one with faceted sides of late Bronze Age are all in the L.M. (These chisels are probably from the pile site.) In the B.M. are a socketed knife and a socketed chisel, found together on the Surrey side of the river. More closely associated with the pile-site, are fragments of Bronze Age pottery (L.M.), a small knife of simple form, a flat sickle of foreign type, fourteen plain bronze rings (one hollow), eight awls, a pair of tweezers, several curious objects resembling a bugle in form (L.M.). This type of object has been found in various parts of England, but the Sion Reach examples differ in that instead of being tubular, they are flat at the back with two projecting rings to attach them to some other object, perhaps harness or sword-sheaths. If these were originally more than mere ornaments, they had gone out of use at this time, as the Sion Reach specimens were for attachment merely, either as amulets or as ornaments. Twelve bronze pins, some with coiled heads and others with a flat disc at the top, an imperfect socketed knife, a curved knife, another of usual form made from a larger blade, a specimen with broad leaf-shaped blade and a tang, are all in the L.M. An early knife-blade with notches in the tang is in the B.M., as well as a small socketed knife with curved sides to the socket. Three small javelin-heads with loops on the socket, of the earlier Bronze Age, a socketed spear-head of middle Bronze Age, and another of the later leaf-shaped form are in the L.M.

The razors are an important and unusual feature from this site. One, in the B.M., has a crescent-shaped blade with a ring for holding or suspension. This and others in the L.M. suggest Swiss Lake forms of the end of the Bronze Age. Other objects, notably a series of bronze discs (L.M.) point in the same direction and give colour to Mr. Crawford's theory. A fine bronze leaf-shaped sword with V-termination to the handle-plate and the similarly fine chape belonging to it (*Arch.* lxxiii, Pl. 49, Fig. 56), part of a sword-blade, a winged sword-chape, a boat-shaped dagger-chape and part of the more usual type of sword-chape are all in the L.M., as well as a bronze dagger-blade of ordinary form. Another of similar type is in the B.M. A weapon of unusual interest is the perforated stone axe-hammer of foreign origin in the L.M. from this spot (Pl. vi, 3). The material is a dark compact stone, resembling diorite. I have not seen another implement of this type from England.

Another axe-hammer of granite with incurved sides, curved cutting edge, long butt of ovoid section and unusual hour-glass perforation is in the same collection (Pl. vi, 4). A club-shaped implement of oak, two whetstones, a fine flint knife-dagger of the Early Bronze Age, a bone weaving-tool, two bone lance-heads, a horn, and a bone implement, a cheek-piece for a horse-bit of Swiss Lake type are all in the L.M., and another flint knife-dagger is in the Guildhall Museum. I have left one of the most interesting objects until the last. This is a flint hammer (of pestle form) with adapted natural shaft hole; the hammer end is ground and then faceted. Most of the other surface is also ground down, and one side has a ridge ground out, parallel with the socket. The other side and the butt are chipped only, as though for grinding, which was never completed. The whole implement is a life-like imitation of a stag's-horn hammer (Pl. viii, A, 2).

It will be seen from this somewhat lengthy enumeration of objects that there is enough evidence to show that this locality was an important settlement during the Bronze Age and for at least most of the time in peaceful occupation. The small number of weapons compared with implements and tools is evidence of this, and the varied types of objects prove the habitation of the place from early to late Bronze times, particularly in the latter.

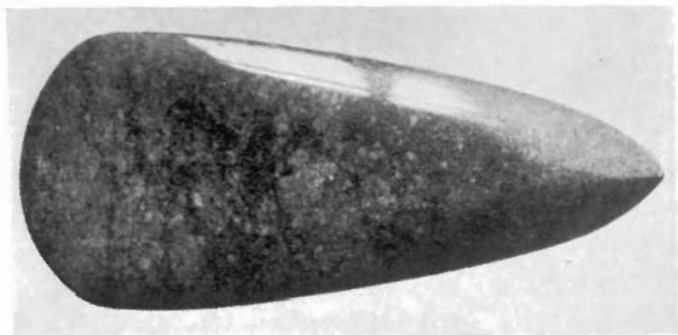
Of the Early Iron period, a fragmentary bronze bowl (perhaps a 'water clock'), and a spear-head, are all in the L.M. A socketed iron axe was picked up on the foreshore here by Mr. Rainbow (*Arch. Journ.* lxxxv, 174). A few Roman antiquities have occurred here, an iron drill, a fragment of decorated pottery, a first brass of Nero ('Decursio' type), two coins of Domitian, a denarius of Hadrian, a second brass of Antoninus Pius (reverse 'Britannia') all in the L.M.; and a Roman terra-cotta mask in the Guildhall Museum.

The prowling Saxon left his mark here. Three spear-heads, a scramasax, a finger-ring, an axe-head, and part of a finely carved bone spoon with typical dragon-head termination to the shaft, are all in the L.M. Relics of Sion House, consisting of a tapestry pricker of ivory of the sixteenth century and a purse-mount inscribed I.H.S. of the late fifteenth century are also in the L.M.

Since this paper was written and read, excavations have been carried out on the foreshore at Old England. They revealed, at low-tide level, potsherds of the Hallstatt Period to which many of the bronze and iron objects enumerated above belong, and so confirm the supposition that a settlement existed here at that period (about 900-600 B.C.). The digging also revealed remains of a Romano-British pile-dwelling. For the report on the excavations, and for illustrations of some of the bronze implements already referred to, see *Antiquity*, iii, 20.

BRENTFORD

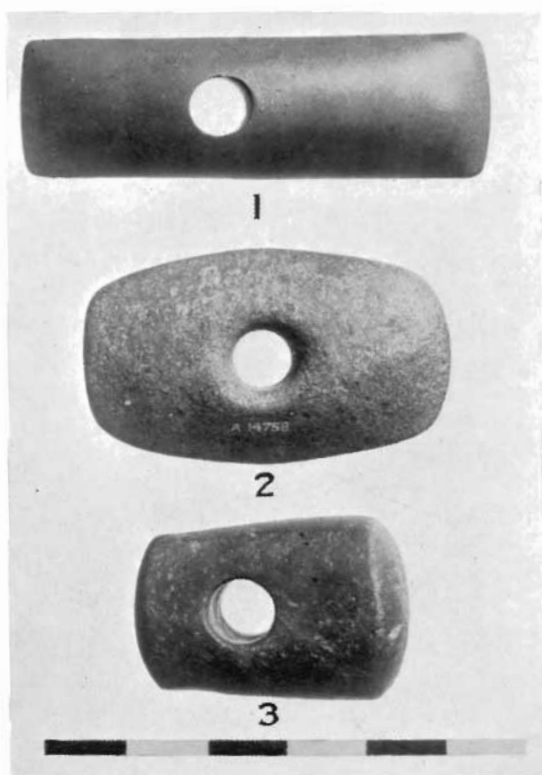
From opposite Brentford came a chipped flint axe (Hilton Price Collection, B.M.), whilst a spear-head of bronze, of slender form with strong midrib and wire loops at the base of the blade, 20 in. long, came from opposite one of the Islands between Kew Bridge and Brentford Ferry (L.M.). A lad diving at the Ferry found a short broad dagger-blade at the bottom of the river (L.M.), and two bronze needles, probably of the Early Iron period,



A. JADEITE AXE, FROM THE THAMES AT MORTLAKE
Length $6\frac{1}{4}$ inches
(*G. F. Lawrence Coll.*)



B. STONE AXE COPIED FROM A COPPER OR BRONZE FLAT-AXE,
FROM SION REACH. Length $4\frac{3}{4}$ inches
(*London Museum*)



STONE HAMMERS OR MACE-HEADS, FROM THE THAMES :
1 AND 2, MORTLAKE ; 3, HAMMERSMITH. Scale of inches

(London Museum)

are in the L.M. A Roman harp-fibula is in the Layton Collection at Brentford, and a stag's-horn hoe with oval shaft hole was found in the backwater at Brentford Eyot, another suggested spot for research. Opposite Queen Elizabeth's Elm, several iron weapons were found including the heads of two early medieval bills, an axe-head of the fifteenth century and a dagger of the sixteenth century, all in the L.M.

On the foreshore on both sides of the river numerous leaden bullets, relics possibly of the Battle of Brentford fought in 1642, have been picked up. Earlier periods are represented by a number of Anglo-Saxon weapons, two iron axes of the Merovingian type, seventh to eighth century, a francisca, three scramasaxes, nine spear-heads, four lance-heads, two shield-bosses, a bone whistle, a Viking axe (Wheeler's type V), a T-shaped axe (type II), a sword of the eleventh century, part of a sword blade, and a knife, the last from the backwater at the Eyot.

KEW BRIDGE

The gravel below the bridge on the north side is only 12 in. deep. From here I have had a drift implement, a bone hammer made from the right radius of *Bos primigenius*, perforated at the upper end, 10 in. long. This may be palaeolithic, but the probability is that it is later. Several have been found in the Thames, one from Hammersmith, in the B.M., has its shaft decorated with a group of herring-bone ornament. A stag's-horn hoe, flint flakes, a scraper, a bone spear-head, a bone netting-tool, a flint 'fabricator,' a stag's-horn socket, a flint pick, two adzes, an axe, a pestle of diorite, all probably of the Stone or Bronze ages and in the L.M. Of the Bronze Age also are a socketed knife, a bronze mace-head, a spear-head (B.M.), two horn hoes, and a hammer. To the Early Iron Age may be ascribed a bronze coin of Cunobeline (Colchester), a wooden mallet (L.M.), a hoe with oval perforation, a socketed axe of iron, a human skull, and the well-known trephined skull described by Dr. Wilson Parry (*Journ. Brit. Arch. Ass.*, n.s. xxii, 50), all from this spot and now in the L.M.

During the rebuilding of Kew Bridge, a bronze socketed axe with ribs on the blade, and with the original wooden handle, was found in dredging out the channel. This was given by the contractors to His Majesty King Edward VII, but its present whereabouts is unknown to me (Pl. ix, B).

Later antiquities have been found here; a spear-head with decorated silver socket of the Viking period (now at Toronto—Pl. xii), three Saxon spear heads, a T-shaped Anglo-Saxon axe (Wheeler's type II), a francisca (all L.M.) and a Viking axe of massive proportions (type V).

STRAND-ON-THE-GREEN

This is another interesting site. The Island, now used by the Port of London Authority, was no doubt inhabited in early times. The number of objects round and just below this spot in the river is strong evidence of this. The large number of human skulls (over 100) found here suggest a tragedy, but their period is unknown. The cheek-piece of a Roman helmet in the B.M. was found just above the Island. The square-ended dug-out in the L.M. came from between this Island and Kew Pier, and was no doubt used in traffic to and from the Island. I am strongly of opinion that

systematic excavation of the backwater between the Island and Strand-on-the-Green would well repay archaeologists, as a small cut into this backwater at its east end produced the objects I am about to enumerate.

A flint scraper, a delicately chipped flint knife, another with grinding on the edge, a bone lance-head, two bronze axes, with somewhat square socket, decorated with three ribs, part of a finger-ring of simple form, a stag's-horn pick, a bronze pin with small flattened head, a fragment of a beaker with herring-bone ornament, and another with finger-print indents, and a fine bronze sword with V-termination to the handle-plate and a strongly ridged blade with four rivets still in position, of the later Bronze Age, 22½ in. long, are all in the L.M., as well as a gold coin of Addedomaros from this site. Several broken bronze objects, necks of vases and other ornaments (possibly relics of a Viking raid), the tang of a large scramasax, an Anglo-Saxon lance-head, a Viking axe (Wheeler's type III, about A.D. 750-850) and four bronze rings with the fronts slightly rounded and the underside flat (part of Viking ring-mail ?) were also found here.

MORTLAKE

Mortlake is also an interesting spot. A house on the north bank of this reach, called the Red House, marks the place in the river from which some very unusual pottery has come. The famous neolithic 'Mortlake bowl' (B.M.) was the first vessel to come to me from here. This was immediately followed by a fine beaker of the Early Bronze Age and a small vase with knobs on the sides of the late Bronze Age. The other antiquities I am about to enumerate came from between a spot slightly above this place and the Ship Hotel, famous in Boat Race annals.

A curious feature of the deposit in the bed of the river at this point is that the gravel is compacted and bound together with what is termed 'race' by geologists. This is a coating of lime which covers the pebbles and cements them into a sort of concrete which has to be broken into with an iron-shod pole, as the iron hoop of the leather dredging-bag or 'spoon net' merely glides over this floor; but when once a hole is made, the gravel can be got up more easily. The objects lie in and below this compact layer. The gravel beneath it is of unascertained depth, and contains the shells of the large fresh-water mussel (*Margaritifera auriculata*). As the valves of the shells are detached, and are of adult specimens, it is probable that they were used as food in prehistoric times. These shells occur also at Putney, Wandsworth and Battersea, all probably inhabited sites. My experience is that the Stone and Bronze Age objects come from the south side of the river, and the Early Iron Age objects from the north side and the middle. I suggest that some of the lighter objects may have floated down from the island. Of the neolithic or early Bronze period:—a flint adze, an axe with ground edge, another of chipped flint, a fragment of stag's-horn with primitive cutting, a flint scraper, a stag's-horn pendant, a bone amulet, two flint knives, another with ground edge, a partly polished flint chisel 6 in. long, an arrow-head, a bone dagger, a pounder and a grain rubber in diorite. Some of these objects, considered in relation with contemporary pottery from the same reach, suggest a settlement here. All the objects mentioned are in the L.M., and, in addition, a polished flint axe is in the B.M. An interesting and unusual weapon of flint was also found here. This is an axe hammer,

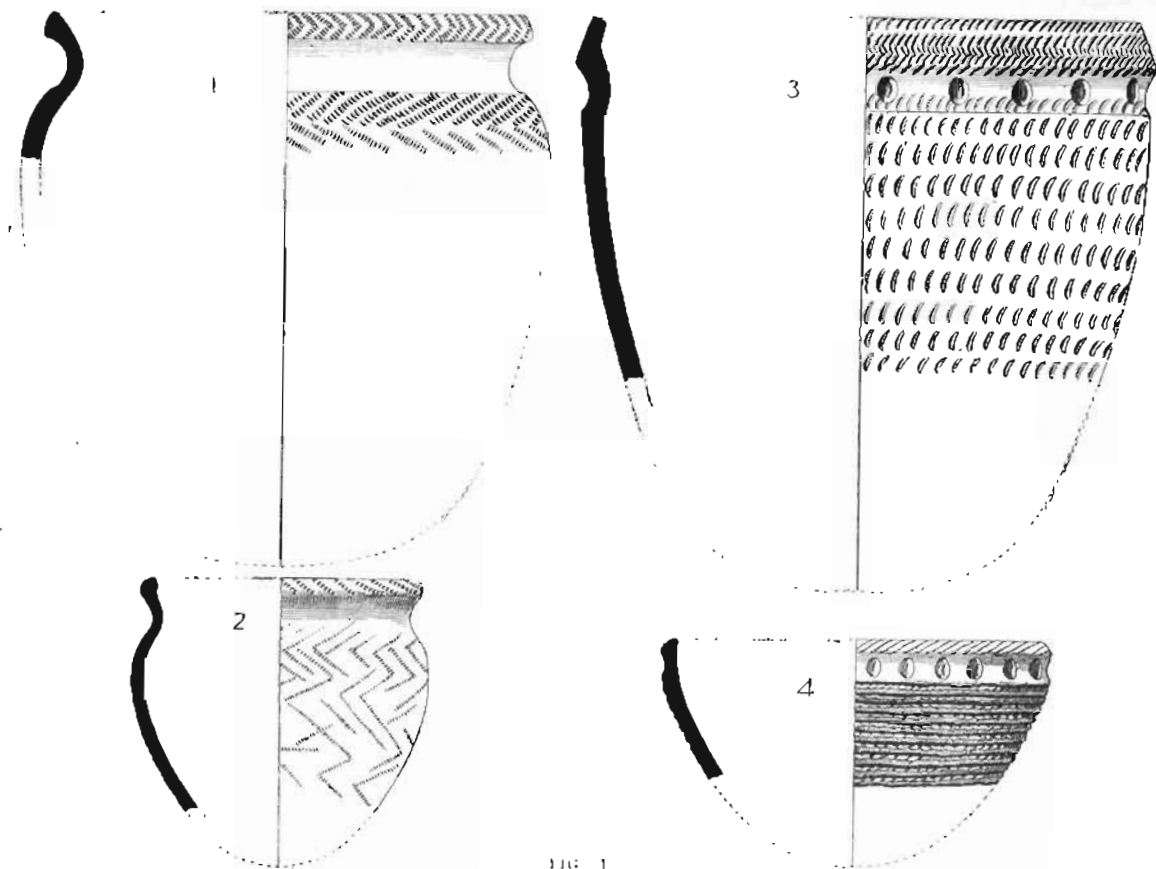


FIG. 1

NEOLITHIC POTTERY FROM THE THAMES AT MORTLAKE. 1 AND 2, ORNAMENTED BY COGGED STAMP; 3 BY FINGERNAIL AND INDENTATIONS; 4 BY CORD, STICK AND INDENTATIONS. $\frac{1}{4}$

(London Museum)

with natural perforation and broad polished cutting edge, and hammer-shaped butt rounded by chipping, $5\frac{3}{4}$ in. long (L.M.). The pottery bowl previously mentioned is of dark material with coarse quartz grains mixed into the body, and is decorated with several bands of herring-bone ornament. The base is rounded, and the rim is pronounced with a strong groove below (see *B.M. Stone Age Guide*, 97, Fig. 86). Other fragments of neolithic pottery from this site are in the L.M.

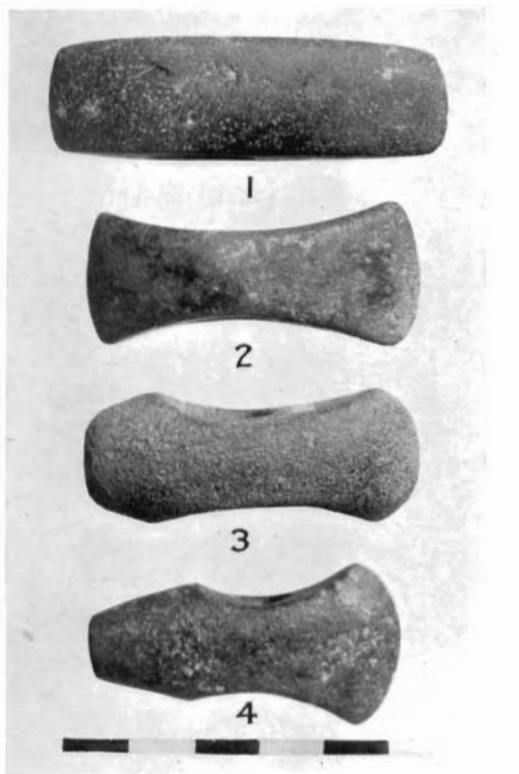
Bronze Age objects include a fragment of a cinerary urn, the base of a beaker, a beaker with bands of dotted lines on the body, and a large specimen with 'Union Jack' design on the neck of the vessel (all in the L.M.—Pl. vii). A large beaker and part of a vase with finger-pressed band on the shoulder are in the B.M., and a stag's-horn hammer and a horn adze are in the L.M. Several stone hammers have been found here: a cushion-shaped specimen of diorite $4\frac{1}{2}$ in. long, and another of greenish-grey stone, finely polished, $5\frac{1}{2}$ in. long, are in the L.M. (Pl. v, 1), whilst another, in the Vize Collection, if of dark green porphyritic stone of long oval shape, 6 in. long. A flanged bronze axe, a palstave, a socketed bronze axe with lines on face (found on the foreshore by the Ship Hotel), a bronze gouge, an early type of knife-blade, a broad dagger-blade with two rivets, a bronze spear-butt, with remains of the shaft in the tube, and one end melted by fire, a long socketed knife of late Bronze Age, and a socketed implement with a curved blade resembling a short spear-head, said to have come from here, are in the L.M., as well as a fine polished flint knife, 4 in. long, found with the bronze dagger-blade opposite the Red House. A bronze hammer from the foreshore opposite the Ship is in the B.M. In my possession is an extremely beautiful jadeite axe-head with pointed butt found in this reach (Pl. iv, A). Axes of this type occur frequently in Brittany but it was long a mystery where the material of which they are made came from.¹ I had one of the same type, but of a darker stone, from Vauxhall Bridge, now in the B.M. There is one from Canterbury in the same Collection, and there are two or three in the Sturge Collection from English localities, one from Burwell is in the Evans Collection and a few others are recorded, but they occur more frequently in Brittany. It is highly probable that these rare axes, and perhaps some of our finer examples in more ordinary material, were ceremonial and not used in daily life.

Of the Early Iron period there are a fair number of objects. A bone comb of the long-handled type, as found at Glastonbury and elsewhere, and an iron spear-head of slender form are in the B.M. A stag's-horn hoe with oval perforation, a wooden mallet, five spear- and javelin-heads, fragments of pottery, part of an urn, a perfect urn of dark brown ware, part of a Hallstatt type of bowl and a vase of black ware are all in the L.M., and a bowl of Hallstatt type in the B.M. Two of the rare socketed iron axes from this spot are in the L.M. (*Arch. Journ.* lxxxv, 174-5.)

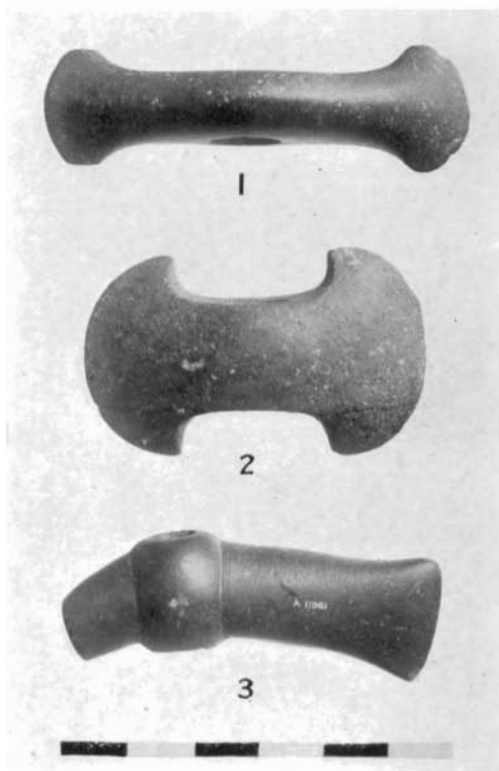
Two important bronze bowls in the L.M. deserve a few words of description. These were found nearly opposite the Red House a little lower down the river, and are curiously alike. The body is globular with a flattened base, and on the shoulder of each vessel is a curious symbol, somewhat resembling a swastika. A similar symbol occurs on an iron sword-sheath

¹ Deposits of this material are known to occur in Brittany (M. de Limur, *Le jade océanien de Roguedas*, Vannes, 1875) as well

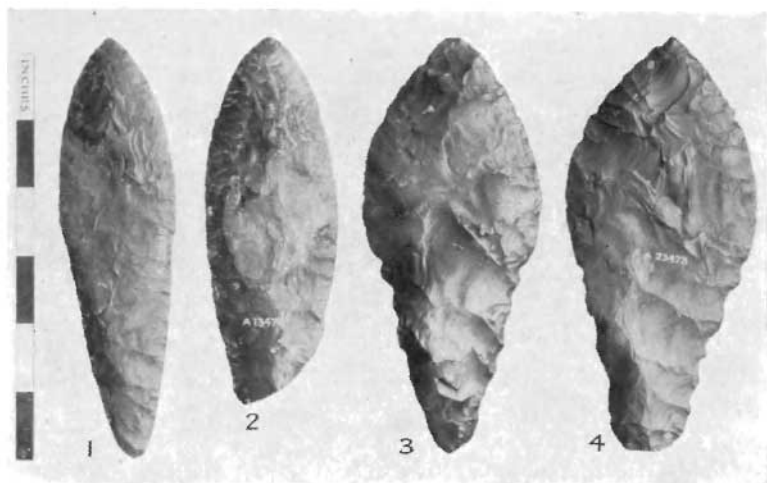
as in Switzerland and Styria (Déchelette, *Manuel d'archéologie* i, 627).



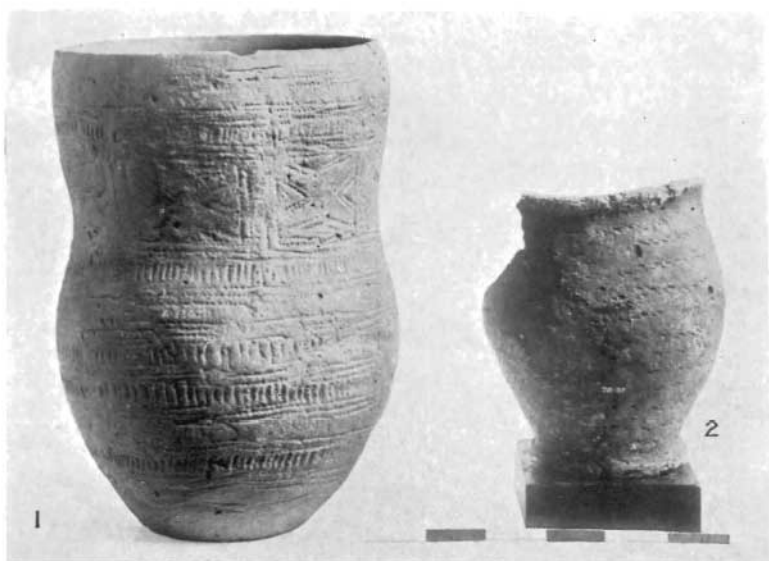
A. STONE AXE-HAMMERS : 1, BATTERSEA ; 2, LONDON ;
3, HAMMERSMITH ; 4, SION REACH. Scale of inches
(*London Museum*)



B. STONE AXE-HAMMERS: 1, ABOVE KINGSTON ;
 2, MORTLAKE ; 3, SION REACH. Scale of inches
 (London Museum)



A. FLINT KNIVES OF 'BEAKER' PERIOD (EARLY SECOND MILLENNIUM B.C.),
FROM THE THAMES: 1 AND 2, HAMMERSMITH; 3, SION REACH; 4, BARN ELMS
Scale of inches
(*London Museum.*)



B. BEAKERS, FROM THE THAMES AT MORTLAKE. Scale of inches
(*London Museum*)

found at Datchet, also in the L.M. The bowls are marvellously thin and show the great skill of the coppersmith of those days. As evidence of the value of these objects in early times, one is most carefully repaired with strips of metal so closely hammered into the body of the vessel as to make it perfectly watertight.

An interesting dagger-sheath made of folded strips of bronze, of La Tène IV, is in the Layton Collection at Brentford, and is figured in *Archaeologia*, lxi, Pl. ii, 5.

Seven Anglo-Saxon spear- and lance-heads have come from this reach, and a fine spear-head, the socket decorated with three ribs in relief inlaid with bronze. An early long-bladed Viking sword, probably of the ninth century, a sickle and a francisca are all in the L.M. as well as a bone comb.

A large quadrangular iron bell coated with bronze, of the type used in the Early Christian Church, has been dredged up and is in the same collection (Pl. xi). Other objects found here include a pilgrim-sign of the fourteenth century, representing St. Peter giving the ring to the Confessor; a dagger with a wooden grip of the fourteenth century; a fine bronze hilted dagger, temp Edward VI (Laking Collection), and another with curved quillons and armourer's mark in copper, of the sixteenth century (L.M.).

BARNES

Barnes is my next locality, and the antiquities came from a spot east of the Railway Bridge in most instances, and all from the Surrey side. I have no record of any dredging from the Ship to Barnes Bridge. At a spot locally termed Small Profit Dock, I found a polished diorite axe embedded in the foreshore and several other objects have been discovered there, some of which I shall mention later. A heavy polished flint axe (B.M.), two diorite axes and a flint axe, a bone lance-head, another of flint, a scraper, a knife and two 'picks' are all in the L.M. The head of a bronze pin, three bronze rings, a fish-hook of bronze, two awls, two palstaves and another with 'arrow-head' moulding on face also come from here. The last was found in the backwater at Chiswick eyot by a boatman who, when landing there, saw the gleam in the shallow water. This is another spot which would repay exploration. The backwaters of the various eyots are not needed for navigation and therefore have not been dredged or cut up by the traffic of tugs and other vessels, so that nothing has been disturbed. Two bronze coins of Cunobelin from Small Profit Dock, and a Saxon javelin-head from the eyot are in the L.M.

HAMMERSMITH

I now reach one of the most important sites of the Early Iron period in this part of the river. This site, known for many years as a very productive one of prehistoric objects, has given us the usual neoliths and a fair number of Bronze Age antiquities. But the most important fact about the site is that during the Early Iron Age there was evidently a flourishing settlement here. Piles have been found on both sides of the river and on the Surrey shore a long stretch of these have been removed from where the bank bends in a southerly direction down the river at least as far as the lower end of the reservoir-bank below the bridge. I hope to particularise the latter site as far as possible by separating the finds made above from those below the bridge. Above the bridge, objects have been found on both sides of the river,

the well-known brooch of La Tène I with coral inset (fifth or fourth century B.C.—see *Arch. Camb.* 1927, p. 82, Fig. 13) in the Lloyd Collection coming from the north bank near a small creek, as well as some other small objects. I must again emphasise, however, that some of the dredged material from London was deposited here, and some of these objects may originally have come from London itself. Some interesting finds have been made opposite the Doves Inn. I have persistently been told of a dagger in a bronze sheath from here. This may be one of those in the Layton Collection.

On the south side, a large number of coins of Carausius was found some years ago, including one of silver (in the collection of Sir John Evans), but whether these were at some period accidentally lost at this spot, or deliberately buried here, there is not evidence to say. However, an Early Iron Age sword was found here *in situ*, and some skulls and fragments of neolithic and later pottery have been dredged up on this side of the river. Stag's-horn implements have been found in goodly numbers during my experience of this site. A palaeolithic implement is in the L.M. Neolithic flakes have occurred, two flint knives, three saws, two 'fabricators,' a sling-stone, two scrapers, a quartzite hammer with rough perforation, $3\frac{1}{4}$ in. long, a flint lance-head of unusual type, two good flint adzes, and four flint axes. These are in the L.M. Six others of ordinary type, a narrow specimen, and one with flat sides and rounded butt are in various collections. A fine chisel, a bone pin, a stag's-horn handle, a bone hoe, an unfinished horn hammer-head and fragments of pottery are all in the L.M., and in the Manchester Museum is a naturally perforated flint hammer. The four pieces of a large bowl of Mortlake type came from here (L.M.).

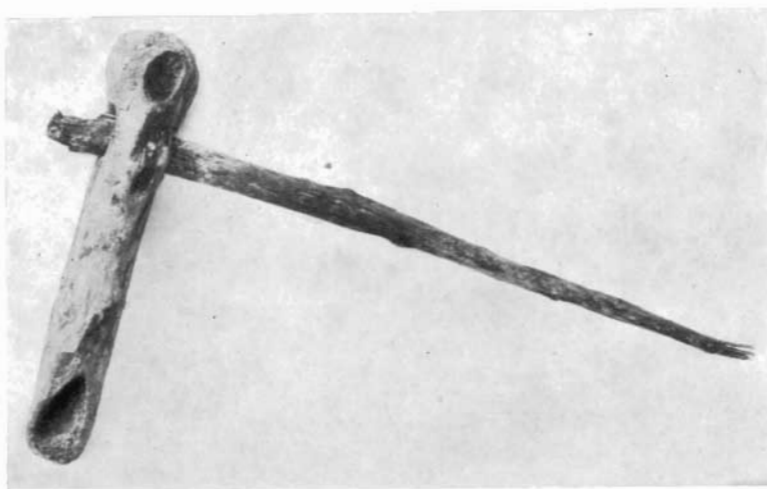
Of the Bronze period:—three hoes of stag's-horn. (L.M. and Guildhall), another found on the south foreshore (B.M.), and, most interesting of all in this group, a stag's-horn hoe, with the original wooden handle, now in the Liverpool Museum (Pl. viii, b). The handle was preserved owing to the fact that an iron object had been lying with this implement, and the oxide had penetrated the wood to such an extent that it had hardened; the only defect was that the lower end had been worn away to a point by current action so that it was impossible to ascertain its original length. Two hammers of horn and several minor objects in this material are all in the L.M. A fine curved knife of flint and a beautiful knife-dagger are also in the L.M., and one with squared butt is in the Sturge Collection (B.M.). An axe-hammer of stone with in-curved sides (L.M.—Pl. vi, 3); a cushion-hammer of slaty material (B.M.); a palstave, found on land near the river (L.M.); a bronze rapier-blade, $18\frac{3}{4}$ in. long; another specimen of shorter length; and a dagger-blade of early type with one rivet in the tang, are also in the L.M. The upper half of a rapier-blade with slots on the tang (Guildhall); a small dagger-blade (B.M.); a dagger with six rivets resembling a halberd blade (Layton Collection); a sword with V-termination to handle-plate (B.M.); a bronze awl; a button; a mount; five bronze rings; an earthenware spindle whorl; fragments of pottery (all in L.M.); and a beaker (Layton Collection) completes my list of this period from Hammersmith. The Early Iron objects comprise a bronze dagger-sheath (B.M.); a horn cheek-piece with oblong slots in the centre and two peg-holes at either end (B.M.); a spear-head; part of a fine bronze sheath with open-work design, retaining the piece of dagger at the back. The latter is



A. 1, STAG'S-HORN MACE-HEAD FROM THE THAMES AT HAMMERSMITH ;
2, FLINT MACE-HEAD, COPY OF STAG'S-HORN, FROM SION REACH

Scale of inches

(*London Museum*)



B. HOE OF STAG'S-HORN, WITH ORIGINAL WOODEN HANDLE,
FROM THE THAMES AT HAMMERSMITH

(*Liverpool Museum*)

extremely well finished and has a rib following the outline of the edge. The blade of an iron dagger, and two unusually fine dagger-sheaths containing the dagger-blade also come from here. The sheaths may be ascribed to the

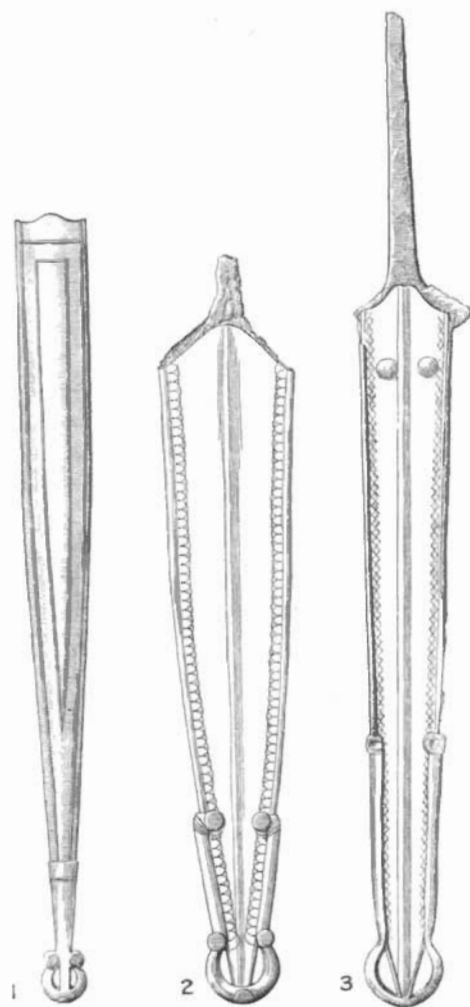


FIG. 2

BRONZE DAGGER-SHEATHS, EARLY IRON AGE, FROM THE THAMES :

1, WESTMINSTER ; 2 AND 3, HAMMERSMITH (½)

(London Museum)

La Tène I-II period (say, 400-100 B.C.). All these are in the L.M. A sword-blade with remains of the iron sheath was dug out of the foreshore opposite the reservoir on the Surrey side of the river (B.M.). Three

sword-blades and fragments of others are in the L.M. and two imperfect iron sword-sheaths, one decorated with a broad band of engraved chequers on the upper part, are in the same collection. It is a curious fact that practically all the swords of this period from the Thames have iron sheaths, while those from other parts of the country have sheaths of bronze, as do the daggers from the Thames. One sword-blade in the L.M. has hammered indents all down the blade. An iron currency-bar of full size was found here (L.M.), the first instance of its occurrence in this district. Bronze pins, with ring-heads and bent shoulders, have also been found (L.M. and B.M.); a bronze coin of Sillyum in Pamphilia, circa 200 B.C.; seven British tin coins; an iron razor, part of an iron sickle, and fragments of pottery of the Hallstatt and La Tene periods; a small bronze bowl decorated with bosses on the flat rim (B.M.), two bronze armlets, and two La Tene III fibulae (all L.M.); a slug-shaped brooch with a high boss on the back plate, and a bronze fish-hook (both B.M.); and a bronze chariot boss in the Guildhall Museum.

Of the Roman period, a bronze knife-handle in the form of a dog chasing a hare, a bronze finger-ring, coins of Claudius, Domitian, Trajan, Allectus, and Carausius, and a number of others have been found (some in the L.M.). A fine bronze fibula, with pierced catch-place, and a silver plate inlaid in the top of the bow is in the Edinburgh Museum.

Of the Anglo-Saxon period, a scramasax, a knife-blade (both L.M.), a gold ring (B.M.) and the model Viking grave-stone in bronze with serpentine ornament on the face in Ringerike style of the first half of the eleventh century (*B.M. Early Iron Age Guide*, 113-114) also in the B.M., complete the list.

CRAB TREE

From below Hammersmith Bridge come the following objects: A leaf-shaped flint knife; four polished axes; three stag's-horn picks, all probably of the neolithic period or Early Bronze Age. The Bronze Age objects include also a bone dagger (L.M.) and a very fine broad knife-dagger, $5\frac{3}{4}$ in. by $2\frac{5}{8}$ in. (L.M.); but objects of this period are rare from this spot.

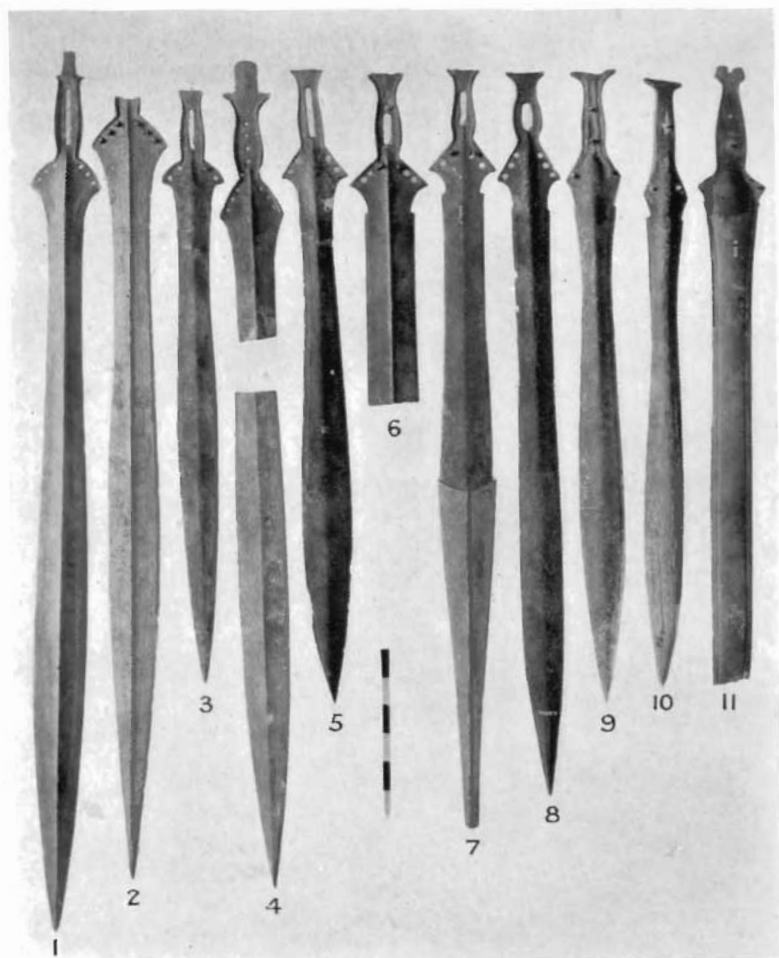
On the foreshore, facing the reservoir, on the Surrey side, piles occur, and at this site the following Early Iron Age antiquities have been found:—a very fine bronze dagger-sheath with a ring-chape, three ring-headed pins (*B.M. Early Iron Age Guide*, Fig. 104) and part of a shield rim; two La Tene fibulae; a bronze whorl; two plain rings; a pin with coral inlay in the head (*B.M. Guide*, Fig. 108); three open-work discs (*B.M. Guide*, Fig. 170); a bronze band and an Early Iron Age spear-head (all B.M.) and an iron dagger-blade with ridged shoulders (L.M.). A dug-out canoe also came from here and is in the L.M. The last item to mention is the wonderful earthenware cup in black ware, with the arched handles (*B.M. Guide*, Fig. 88; *Proc. Soc. Ant.*, 2nd Ser. xxv, 84). This may have come from the neighbourhood of Troy, or at any rate from the eastern Mediterranean, in the ninth century B.C. It was found on the foreshore at the eastern end of the reservoir in a groove made by a boat when coming ashore. The finder noticed the black side showing in this groove and dug it out, bringing it to me the same day. An Anglo-Saxon mount in bronze (B.M.) and an iron spear-head of the same period (L.M.)



A. BRONZE HALBERD, FROM THE THAMES AT LAMBETH. Scale of inches
(*London Museum*)



B. BRONZE SOCKETED AXE WITH ORIGINAL HANDLE, FOUND DURING THE
REBUILDING OF KEW BRIDGE
(*Now lost*)



LEAF-SHAPED BRONZE SWORDS, FROM THE THAMES: 1, MILLWALL; 2 AND 3, WANDSWORTH; 4, BATTERSEA; 5, BOW CREEK; 6, BATTERSEA; 7 (WITH CHAPE), SION REACH; 8, STAINES; 9, STRAND-ON-THE-GREEN; 10, NEAR LONDON; 11, OPPOSITE THE TOWER OF LONDON. Scale of inches

(London Museum)

completes my list from this site, but I again state my firm conviction that if the foreshore here were dug over properly much should be found of this period. A wooden bowl was exposed at low tide some years ago, but fell to pieces owing to excess of zeal on the part of the finder; and a skull was also found here. This settlement may at one time have extended as far east as the Beverly Brook, as piles have been seen on the foreshore there and an Early Iron spear-head was picked up only a few yards west of the Brook (B.M.).

BARN ELMS

Of the neolithic period, a flint knife, polished axes of flint and diorite, two flint chisels, a bone netting-tool, and a naturally perforated flint maul are all in the L.M. A fine pottery bowl of hemispherical form with decoration of herring-bone in dotted lines, $5\frac{1}{4}$ in. long, in the Edinburgh Museum was also found here some years ago. Fortunately, it rolled down the gravel into the punt when found, and was uninjured. Mr. Alexander Keiller tells me that this is of the pre-Beaker period. The usual horn hammers and hoes ascribed to the Bronze Age have turned up, and at a point where a small outflow from the ditch at Barn Elms was situated, now covered in by the embankment, the following Bronze Age objects were found:—a fine knife in black flint of crescentic form with ground edge, $3\frac{3}{4}$ in. by $3\frac{1}{2}$ in. (L.M.); a bead of stag's horn, with hour-glass perforation (L.M.); a bronze hammer, a socketed sickle with grooved blade, a sword-blade with notches at the tang, a bronze sword, a short dagger-blade (all B.M.); a bronze palstave, and a human jaw (L.M.). Two early iron spear-heads, one with a depression and central rib in the middle of the blade and a bronze rivet, a British tin coin (all L.M.) come from here, and a bronze dagger-sheath was found on the foreshore at low tide (B.M.). The section of the river bed here, termed the 'Old River' by the Port of London workmen, on the south side is as follows:—

No peat.

18 in. of drifted material of recent origin.

3 to 4 feet of hard compact gravel; in this are the antiquities.

Below this an unknown depth of sandy gravel with large and small mussel-shells.

On the Fulham side of the river, the gravel is only about 24 in. deep and does not appear to contain prehistoric antiquities. The well-known Roman sword in its bronze sheath, given by Mr. Layton to the B.M., was found near the Middlesex shore. But this side of the river has been unproductive to me as far down as Wandsworth Bridge and the gravel is shallow as a rule as far as that point. (A good bed of fine sand occurs east of the Railway Bridge.)

Nothing has come to me from the river, except a few Anglo-Saxon objects in the area from Beverley Brook to Putney Bridge, but on the site of the old bridge, where there was probably a ford in early times, some interesting and fine objects have been found.

PUTNEY BRIDGE

In 1885 I found a small 'drift' implement in the material dredged up from under the New Bridge, and a fine flat discoidal implement of Le Moustier type from here is in the L.M. Other finds include a neolithic

pick, a diorite axe, a flint axe, a stag's-horn, and a flint maul with natural perforation—a type which seems more usual in the Thames than elsewhere. (All in the L.M.) The following Bronze Age objects have been found hereabouts:—spear-head with tapering blade and stout cylindrical socket with rivet hole of Early Bronze period, found between Putney and Wandsworth, slightly east of Putney Railway Bridge; a bronze spear-head with narrow blade and strong midrib; a bronze spear-head with somewhat narrow leaf-shaped blade, and strong midrib; a bronze rapier blade; a bronze palstave, also three Early Iron Age spearheads. These are all in the L.M.

On the south foreshore near the Railway Bridge I found a small Saxon iron bell (L.M.). Tradition says that the Danes had a winter camp at Fulham, and to strengthen that argument I have had several objects of this period from opposite the camp (supposed to have occupied the site of the Bishop's Palace):—two Anglo-Saxon spear-heads, a Viking spear-head (Petersen's type K), a Viking axe (Wheeler's type I), a sickle, the blade of a flat backed sword, 30 in. long of slender form, a weaving 'sword,' and an ordinary scramasax (all L.M.). The discovery of a Viking sword of Wheeler's type VI was marked by a curious coincidence. The hilt and part of the blade were found in the gravel under Putney Railway Bridge by a man looking for antiquities on my behalf during a strike of labourers some years ago. About a year later another man was dredging in Putney Reach, opposite the boat-houses and about half a mile from where the sword came. He found the point of a sword and fortunately brought it to me and I thought that it might fit the broken blade. This turned out to be the case and the completed sword is in the L.M. A sword of *circa* 1300 with drooping quillon and disc-pommel was found on the site of the Old Bridge and is also in the L.M. A bronze palstave was found in Putney Bridge Road on the site of Cromwell House, and pigmy flints and a saw came from a spot facing Wandsworth Park.

WANDSWORTH

On the foreshore flanking the Park, a tug had gone ashore and the propeller, in the effort to get away, dug a hole in the gravel, sweeping it away for some depth. A longshoreman, seeing the heap of gravel, looked in the adjacent hole and found a fine sword of the fourteenth century, now in the L.M.

Wandsworth Reach was an important site in early times, and many objects, especially of the Early Iron Age, have been found there. Unfortunately most of the dredging was done before I began collecting, so that I have no notes of the more important Early Iron Age objects in the B.M.

The section of the bed on the Surrey shore at the mouth of the Wandle is as follows:—

Recent drift, 2 ft.

Peat, 1 ft.

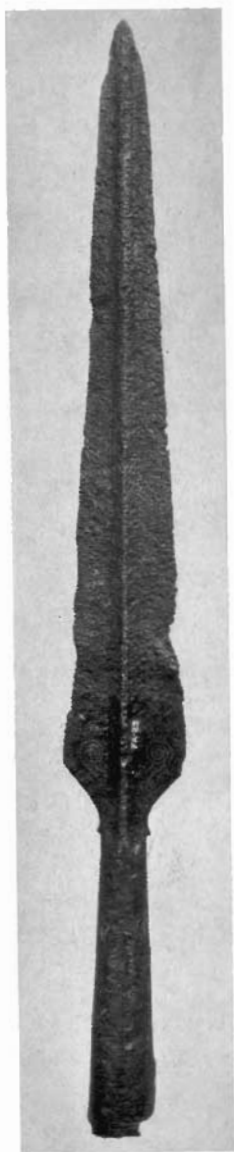
Gravel of unknown depth. In the centre of the river there is only a depth of about 12 in. of the original gravel deposit and the layer is thin towards the north bank.

There was probably an Early Iron Age settlement between the Wandle and Putney Bridge on the Surrey side. Piles have been found and fragments



BRONZE-PLATED IRON BELL, EARLY CHRISTIAN PERIOD,
FROM MORTLAKE. Scale of inches

(London Museum)



IRON SPEAR-HEAD WITH SILVER INLAY,
c. TENTH CENTURY. FROM KEW
BRIDGE. About $\frac{7}{8}$.

(Royal Ontario Museum of Archaeology, Toronto)

of pottery. There may have been a ford in early times on the site of Wandsworth Bridge as a Roman horseshoe and two Late Bronze Age swords came to me from this spot.

Four drift implements were found opposite the Park as well as several flakes, one of Levallois type; also a skull of *Bos longifrons*, two bone pins, a flint knife, a diorite pestle, two scrapers, a core, polished and chipped axes and a stag's-horn harpoon (all in the L.M.). To these may be added: a bronze palstave (mouth of Wandle), a dagger-blade (mouth of Wandle), a bronze ferrule, a razor, two bronze swords with V-form at base of the tang (L.M.) and two looped palstaves (B.M.). A bronze sword with V-shaped handle-plate, broad blade and six rivets, was found in the peat under the wall of the Gas-Works (B.M.), and a bronze socketed axe, with ribs on the face, just inside this wall. The hoard of bronze axes and lumps of copper, of the Late Bronze Age, was found within the Gas Works precincts (near the river). It is now mostly in the B.M.

As I have previously remarked, during dredging under Wandsworth Bridge two fine bronze swords of the Hallstatt period were found (one 27 $\frac{3}{4}$ in. long, in the Edinburgh Museum, and the other in the Laking Collection). The very fine bronze dagger-sheath with oval chape decorated with mock spirals came from between the mouth of the Wandle and Wandsworth Bridge. The finder broke off the ivory or bone handle and threw it away. This sheath is illustrated in the *B.M. Guide Early Iron Age Guide*, Fig. 120. A bronze pin, part of a bowl of grey ware, a barbarian copy of a quadran, circa 50 B.C., an iron spear-head and two weaving-combs, all of this period, are in the L.M., and a brooch of Italian type (*Proc. Soc. Ant.*, 2nd Ser., xxi, 116, Fig. 27) is in the Edinburgh Museum. Part of a bowl of Hallstatt type is in the L.M. In the Layton Collection at Brentford is a food-vessel of the Bronze Age from this Reach, and I have omitted to mention that a small knife-dagger of flint came from the foreshore east of the Wandle and a tanged bronze knife of Swiss-Lake type was found on the west side of the mouth of the Wandle (B.M.).

When the steamboats were running some years ago, the backwash cleaned away the foreshore in front of the Park and at the mouth of the Wandle, and several objects were found by myself or brought to me by others.

BELOW WANDSWORTH BRIDGE

From here came a drift implement, a horn harpoon-head, axes of flint and diorite, mussel shells (*Margaritifera*), bone and horn implements, a piece of stag's-horn with long projecting teeth, thought to be 'horn pins in the making' but possibly rather a neolithic weaving comb, part of a decorated bowl of Early Bronze Age, the point of a bronze sword, half of a bronze sword with lines on the blade, are all in the L.M. Also, a fine leaf-shaped bronze spear-head, 15 $\frac{1}{2}$ in. long (B.M.), and a bronze rapier-blade have been found in this reach (L.M.). A Roman javelin-head, a Roman silver armlet, five Anglo-Saxon spearheads, one 18 in. long, another of Carolingian type with angular projections on the socket; a scramasax, a knife, four coins of Burgred, a bronze ring, a glass bead, a sickle, and a bone spindle-whorl are all in the L.M. and came from just below Wandsworth Bridge.

Nothing has been found in this reach below 'Sugar Factory Dock' except a flat bronze axe from near Price's Candle Factory (B.M.).

CHELSEA

On the foreshore on the Chelsea side of the river, from the railway bridge along the front of the Tyne Main coal wharf, are piles, bones and fragments of pottery, and an iron currency-bar is said to have been found here, but was thrown away. The section of the river-bed here is:—

Modern drift, 18 in.

Peat, 18 in.

Concreted gravel, and in the middle of the river a depth of 12 in. of gravel only, as in so many places in the Middle Thames.

A bed of peat occurs in the foreshore at Battersea Church but nothing came from here. From the area of Battersea Bridge came a short sword blade with short tang (L.M.), a bronze rapier-blade (L.M.), and a similar weapon (B.M.). A broad short dagger with two rivet-holes (B.M.), several palstaves, another of early type developing from the flanged form (B.M.), another with loop (B.M.), a socketed bronze axe with ribs (B.M.), another of heavy type decorated with circle-and-dot connected by angular lines (L.M.). These are all of the Bronze period, as well as a spear-butt (*Archæologia*, lxi, Pl. 80, Fig. 76). An axe-hammer of diorite with oval shaft-hole (Pl. vi, A, 1), an Early Iron Age sword-blade (L.M.), an iron spear-head with bronze rivet (L.M.), and the bronze dagger-sheath with anchor-chape (*B.M. Guide Early Iron Age*, Pl. ix, Fig. 1). The last came from the Chelsea side of the river just west of Battersea Bridge, and a bronze sword of Hallstatt type (B.M.) was found in building this Bridge. The finder was told that it was a clock-hand, but fortunately brought it to me for an opinion. Net-sinkers, possibly Roman, are common here and at Kew and other parts of the river. From opposite the east end of Battersea Park came a bronze leaf-sword of Continental type with U-termination to the handle-plate; a pestle-shaped hammer of polished flint with natural shaft-hole (both L.M.), and during the repairing of the buttress of Grosvenor Road Railway Bridge on the Surrey side, a socketed bronze axe and three lumps of copper (Guildhall). Three Roman cakes of lead, inscribed SYAGRIVS, came to me from this reach, but unfortunately I cannot locate the spot (one B.M., two York Museum—see Roy. Commission on Hist. Mons. report on *Roman London*, p. 175). From Battersea Park itself a fine polished flint axe with flattened sides, a flint knife probably of the Bronze Age, Roman coins of Vespasian and Domitian, and a jet pin are all in the L.M., and from this reach a fine large scramasax, four smaller examples, two spear-heads, a comb-handle, an eleventh-century Viking axe with dotted decoration on the blade, and another of similar date with a bronze tube-socket decorated with indented dots are all in the L.M. (see catalogue, 'London and the Vikings'), as well as one of the T-form and a francisca from Chelsea Reach.

In the matter of the vexed question of the old crossings of the river, relics should be the surest evidence. I cannot record any number of weapons either of the Bronze or of the Early Iron Age from Brentford Ferry; neither have I seen anything convincing from Westminster at the Horseferry. But Battersea undoubtedly had a ford in early times. On the foreshore, opposite the Park, at about the centre of the river wall, is a defined hump of gravel running into the river, and the number of bronze swords from Battersea in various museums, a goodly series of Early Iron Age swords

and the famous bronze shield in the B.M. suggest that there was a crossing here and that it was more than once disputed. The scarcity of Roman weapons in the Thames is notable; it is eloquent of safer traffic and of the absence of any pronounced military element in the population of the Thames valley in Roman times.

VAUXHALL

A flint axe came from just above Vauxhall Bridge, but nothing else so far as I can remember. At Vauxhall Bridge itself when it was rebuilt, the fine Viking sword formerly in the Laking Collection (Fig. 2) was found, in repairing a breach in one of the caissons, and the rare flat stone axe of Brittany type with pointed butt (B.M.) was found by a diver when clearing the channel after the rebuilding. Several antiquities have been found opposite the Tate Gallery. A small axe of diorite, a large polished flint axe with narrow butt and rounded sides, $9\frac{1}{2}$ in. long, others of diorite and flint, and a flint knife are in the L.M., as well as a bronze dagger-blade, $7\frac{3}{4}$ in. long, another 14 in. long, a spear-head with loops and slender blade, $15\frac{3}{4}$ in., an Early Iron Age spear-head, a Viking spear-head of Petersen's type K, and part of an iron sword.

In the B.M. are a socketed bronze axe with ribs on blade, and another of the Early Iron Age. On the site of the Tate Gallery, in the marsh, were found a bronze chisel in its original horn handle (B.M.), and a second-brass coin of Nero.

From the site of Gorrings' in Buckingham Palace Road, in the marsh amongst piles, came a bronze palstave (L.M.). This and the bronze chisel from the Tate Gallery (B.M.), and two or three bronze objects, including a tanged knife, from Storey's Gate show some evidence of a settlement in the marshland adjoining Thorney Island (all in the L.M.). A fine silver armlet of the Viking period was also found in the marsh at Storey's Gate (L.M.).

LAMBETH

I also had a diorite axe from Lambeth (L.M.), another of polished black flint slightly flattened at the sides, a bronze sword-blade and a flanged axe (all in the L.M.), and two fabricators from Westminster (L.M.). Excavations at the corner of Horseferry Road for the Gardens exposed a bed of peat, 3 ft. thick, and a bed of gravel, 18 in. deep, at the river end, thinning out towards the road. From this came a chipped axe of flint (L.M.). From the County Hall site came a Late Celtic bronze dagger-sheath of narrow type with looped chape (L.M.—Fig. 1), a sword with short tang and four rivet-holes of early form (*Archaeologia*, lxxiii, Pl. 38, Fig. 15) and two scramasaxes; and from the foreshore a fine halberd-blade, $11\frac{1}{4}$ in. long, with two stout rivets (Pl. ix, A), and two stag's-horn hoes with oval sockets (all L.M.).

This ends the area with which I am familiar. In the L.M. are bronze spear-heads from the Temple and London Bridge, a palstave from Blackfriars, and other relics from the lower Thames. I will conclude this somewhat lengthy enumeration of antiquities by mentioning an interesting find of Viking objects on the foreshore at London Bridge a few years ago, no doubt evidence of one of the raids on London by these folk in the eleventh century. Six Viking axes of iron, two others with decorated bronze tubes to receive

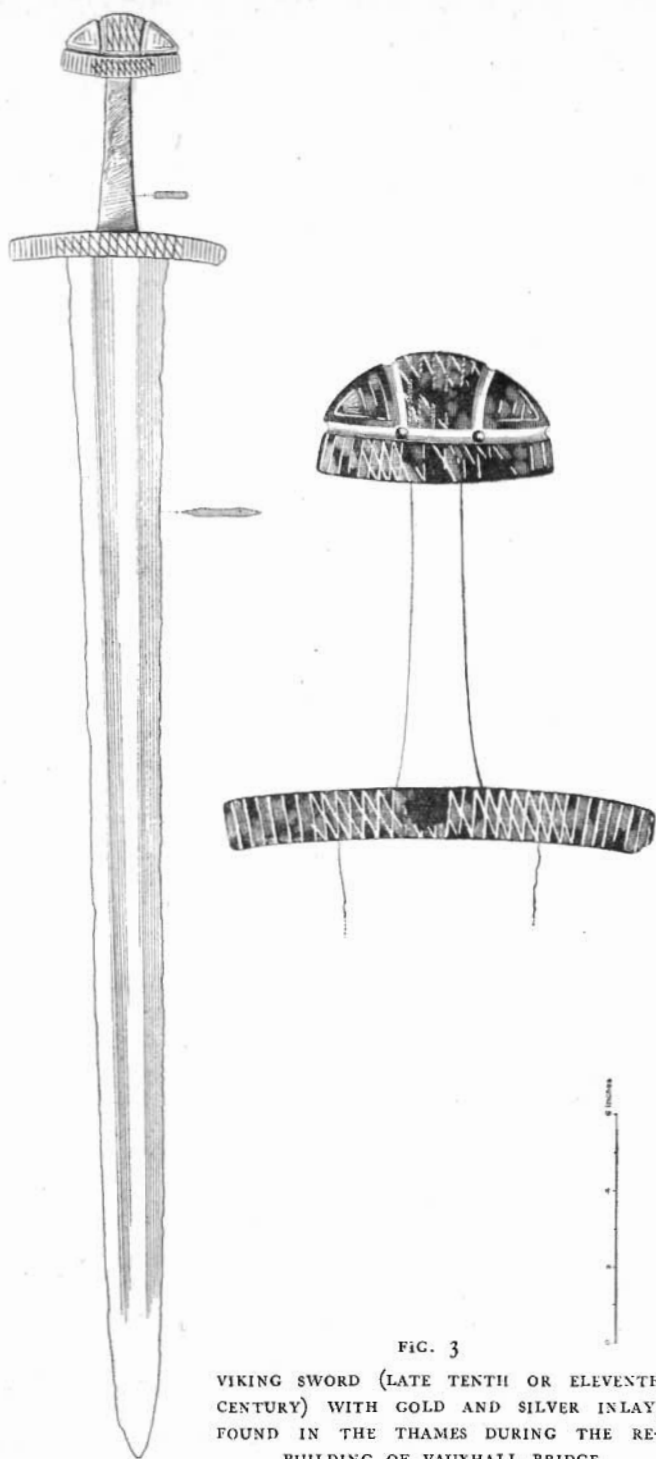


FIG. 3

VIKING SWORD (LATE TENTH OR ELEVENTH CENTURY) WITH GOLD AND SILVER INLAY, FOUND IN THE THAMES DURING THE RE-BUILDING OF VAUXHALL BRIDGE

(*Royal Ontario Museum of Archaeology, Toronto*)

the shaft (one of them ornamented with typical Ringerike design), five spear-heads, another with silver plating on the socket with zoomorphic decoration, a grapnel and a pair of smith's tongs, were all found in a mass; these are in very good condition and are all in the London Museum (Catalogue, 'London and the Vikings,' p. 18). Some antiquities of the medieval period, including two silver spoons of the early fifteenth century, came from the same spot, and in the British Museum is a fine flint knife-dagger from the Thames at London, one of my earliest acquisitions. This I was pleased to place in the collection of my friend, the late Canon Greenwell, to whom I owed much encouragement in my study of prehistoric antiquities. Another valued friend, the late Sir Wollaston Franks, once told me that in the British Museum is a bronze shield which was caught on the hook of a fisherman when fishing near London Bridge. I fear that few fish could be caught there nowadays, although perhaps another shield might be brought to the surface by this means!

This paper, rather in the nature of a catalogue, has, I trust, given some idea of what can be done by a close watch on operations in and beside a river. The number of relics of traders, fugitives, raiders, or settled inhabitants that have been saved by a careful encouragement of those engaged in the work of clearing and embanking this part of the Thames has, I feel sure, been sufficient reward for this attention. When our authorities come to realise adequately the value of the relics of our own ancestors, and devote a fund for proper research, I suggest that the various backwaters mentioned in this paper should be systematically excavated. This would, I consider, be less expensive than work on the foreshore, although those spots at Hammer-smith, Wandsworth and Battersea to which I have called attention should certainly be investigated at some time for evidences of the people who lived here just before and during the Roman occupation. Probably the evidence would be forthcoming by a careful removal of the gravel to a depth of little more than 2 ft., since, so far as I can ascertain from the evidence of the compacted gravel on the surface of the river bed and the objects of stone and bronze lying on that surface, this gravel has not been disturbed for many centuries.

A brief *résumé* of types of implements from the sites in the middle Thames may be of use:—

The so-called 'picks' are common, and occur at all the sites, so far as I can remember; whilst adzes with a flat underside are also numerous. These simpler tools may be

of various periods, as polished adzes are rare and metal adzes are not known. Stag's-horn hoes and hammers also are very frequent, some with polished outer surface, and, as I have already said, they were no doubt in use from the early Bronze Age (or earlier) down to the Early Iron Age. Occasional small neolithic implements come from a few sites, and arrow-heads also. Those found are usually of the leaf-form, while barbed specimens (Bronze Age) are rare. pebble-hammers with hour-glass perforations rarely occur, but several naturally perforated flint-hammers are probably of the Bronze Age. Polished axes are common, chiefly those of oval section, but several of the flat slender type with pointed butt are recorded and also a few of the Dolmen period, with flattened sides and rounded butt. Chisels are rare. I know only of about six specimens. Flint was the usual material for axes in the neolithic period in this district but a number of specimens of diorite, many with roughened butts, and a few of bluish material, usually of the Dolmen period, with flattened sides, have been found. Neolithic pottery has been found, particularly at Mortlake, Hammersmith and Wandsworth. Of the Bronze Age, several small simple blades of early form have occurred, and one flat axe; but little of the Arretton Down culture has been found, the dagger from Richmond, and four flanged axes (Kingston, Sion Reach, Mortlake and Lambeth) being all to my knowledge. Palstaves are common and are usually of the narrow type, with and without loops; only a few are of the broad-bladed variety. Socketed bronze axes are fairly numerous, some decorated, others plain. One of foreign type with squared socket and narrow blade came from Erith (B.M.), and several faceted examples of late type are recorded here. Bronze javelin- and spear-heads in every stage of development have been found. The small javelin-head with loops on the socket is fairly common, and those with the wire loop at the base of the blade are also numerous. The late type with the leaf-shaped blade and rivet-hole is frequent; but the variety with openings in the blade is rare. Swords, from the early simple blade with a short tang down to the bronze Hallstatt sword, are also well represented. Chapes are rare, which suggests to me the possibility that many of the swords were lost in fighting and did not get into the river complete in the sheath,

except in rare instances. The axe-hammer and hammer are of various materials, some volcanic, and may have been derived, with the diorite and the bluish stone, from the glacial beds either directly from the washed-out material in the river or from the original deposit north of the Thames. They are sometimes beautifully finished, and the 'pestle' and 'cushion' types are well represented from this area. Sickles, gouges and bronze hammers are rare, but smaller objects occur on the inhabited sites. Knife-daggers are fairly numerous and several ground knives have been mentioned. Of the Hallstatt period, bronze swords and winged chapes and one or two other objects have been found. Of the La Tène period, a goodly array of objects is in the British and London Museums, as mentioned above.

It will appear from this paper that the Middle Thames was populated practically continuously from early neolithic times down to the Roman period. The bronze spear-heads especially show a nearly complete sequence, from the dagger type to the hollow cast and other later styles, and the same applies to the bronze swords. The scarcity of Roman objects is accounted for by the fine road-system which during that period minimised the importance of the Thames for transit.

With the exception of Sion Reach I cannot definitely say that any part of the river has been systematically and thoroughly dredged out. The deepening of the navigation-channel by this process has left a part of the bed, between low-water and the deep channel, un-cut. These lateral strips of river-bed would well repay investigation, especially at Mortlake, Hammersmith, Barn Elms, Wandsworth and Battersea. It is important, however, to note that, so far as I can ascertain, nothing has been found in the *main stream* flanking the various islands—a fact which emphasises my suggestion that the antiquities there lie in the narrower side-channel.

In conclusion, I may draw attention to those sites which have proved rich in antiquities, and to those sites which, though equally dredged, have been relatively barren. The *rich sites* are Sion Reach ; Mortlake Reach ; Hammersmith Reach and thence down to the Crab Tree ; from the mouth of the Wandle to Sugar Factory Dock ; opposite

Battersea Park; and opposite the Tate Gallery—in this case, curiously enough, on the Middlesex shore. Of these sites, Sion Reach was a habitation-area at the end of the Bronze Age and in Roman times; Mortlake Reach in the neolithic and early Bronze Age; and Hammersmith in the La Tène period. Battersea Park and the Tate-Gallery districts may also have been Bronze and Early Iron Age dwelling-sites, but may primarily have been river-crossings.

The *poor sites*, where relatively little seems to have been found, are between Eel Pie Island and Richmond Bridge; between the lock and weir and Isleworth Ferry; the main stream between Kew Bridge and the neighbouring railway bridge; between Barnes railway bridge and Chiswick Ferry; between the Beverley Brook and Putney Bridge; between Putney Bridge and the mouth of the Wandle (except on the site of Old Putney Bridge); from Sugar Factory Dock to Chelsea railway bridge; and opposite Nine Elms.

I know of no dredging between Richmond Bridge and the lock and weir; from Queen Elizabeth's Elm (by Kew Gardens) to Kew Bridge; from the Ship at Mortlake to Barnes railway bridge; from Chiswick Ferry to the Doves at Hammersmith; and opposite St. Thomas's Hospital, Lambeth.

I am indebted to Dr. R. E. M. Wheeler for much assistance, especially in regard to the specimens secured by me whilst Inspector of Excavations to the London Museum. I would also extend my thanks to the authorities of other museums which had previously obtained from me most of the specimens referred to in this paper.